4th Load of
4 Loads

Load 4 of 4

This Memorandum is an acknowledgment that a Bill of Lading h[illegible]ed and is not the Original Bill of Lading, nor a copy or duplicate, covering t[illegible] named herein, and is intended solely for filing or record.

Shipper No. ______

Carrier No. ______

Page 1 of 1   Alumatherm (Name of carrier)   (SCAC)   Date 09-22-94

On Collect on Delivery shipments, the letters "COD" must appear before consignee's name or as otherwise provided in Item 430, Sec. 1.

TO:
Consignee Alumatherm
Street 7474 Garden Grove Blvd.
City Westminster State CA Zip Code 92683

FROM:
Shipper Douglas Aircraft Company C6
Street 19503 South Normandie Avenue
City Torrance State CA Zip Code [illegible]
24 hr. Emergency Contact Tel. No. 1-800-242-9300 [illegible]

Route   Vehicle Number

No. of Units & Container Type	HM	BASIC DESCRIPTION Proper Shipping Name, Hazard Class Identification Number (UN or NA) per 172.101, 172.202, 172.203	TOTAL QUANTITY (Weight, Volume, Gallons, etc.)	WEIGHT (Subject to Correction)	RATE	CHARGES (For Carrier Use Only)
12 x 17H	X	Sodium nitrate, 5.1, UN 1498, PG III	440 Gallons	8,298 lbs.		

PLACARDS TENDERED: YES ☑ **NO** ☐ Offered

REMIT C.O.D. TO: ADDRESS

Note — Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding
$ ______ per ______

I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping *name and are classified, packaged, marked and labeled,* and are in all respects in proper condition for transport by ▪ Rail ▪ Highway ▪ Water (DELETE NON-APPLICABLE MODE OF TRANSPORT) according to applicable international and national governmental regulations.
Robert G. Tuell Jr. Signature

COD Amt: $

C.O.D. FEE: PREPAID ☐ COLLECT ☐ $

Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
______ (Signature of Consignor)

TOTAL CHARGES: $

FREIGHT CHARGES
FREIGHT PREPAID except when box at right is checked ☐ Check box if charges are to be collect

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of, said property over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.
Shipper hereby certifies that he is familiar with all the bill of lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

SHIPPER Douglas Aircraft Company - C6
PER Robert G Tuell, Jr.

CARRIER Alumatherm
PER [illegible]
DATE 9/22/94

4

Permanent post-office address of shipper.

STYLE F60 LABELMASTER, Div. of American Labelmark Co., Chicago, IL 60646 312/478-0900

BOE-C6-0207422

DPM / DMS _____

MANUFACTURER _____

PRODUCT NAME Sodium nitrate

PRODUCT NUMBER _____

PROPER SHIPPING NAME Sodium nitrate

HAZARD CLASS 5.1

UN/NA/ID NUMBER UN1498

GUIDE 35

POTENTIAL HAZARDS

FIRE OR EXPLOSION

May ignite other combustible materials (wood, paper, oil, etc.).
Reaction with fuels may be violent.
Runoff to sewer may create fire or explosion hazard.

HEALTH HAZARDS

Contact may cause burns to skin and eyes.
Vapors or dust may be irritating.
Fire may produce irritating or poisonous gases.
Runoff from fire control or dilution water may cause pollution.

EMERGENCY ACTION

Keep unnecessary people away; isolate hazard area and deny entry.
Self-contained breathing apparatus (SCBA) and structural firefighter's protective clothing will provide limited protection.
CALL CHEMTREC AT 1-800-424-9300 FOR EMERGENCY ASSISTANCE. If water pollution occurs, notify the appropriate authorities.

FIRE

Small Fires: Dry chemical, CO2, Halon or water spray.
Large Fires: Water spray or fog.
Move container from fire area if you can do it without risk.
Cool containers that are exposed to flames with water from the side until well after fire is out. Stay away from ends of tanks.
For massive fire in cargo area, use unmanned hose holder or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

SPILL OR LEAK

Do not touch spilled material.
Keep combustibles (wood, paper, oil, etc.) away from spilled material.
Small Dry Spills: With clean shovel place material into clean, dry container and cover; move containers from spill area.
Small Liquid Spills: Take up with sand, earth or other noncombustible absorbent material.
Large Spills: Dike far ahead of liquid spill for later disposal.

FIRST AID

Move victim to fresh air; call emergency medical care.
Remove and isolate contaminated clothing and shoes at the site.
In case of contact with material, immediately flush skin or eyes with running water for at least 15 minutes.

DPM 958

7/94 No longer sell Sodium Nitrate per telephone call by L.A. Pritchett

SAFETY HEALTH AND ENVIRONMENTAL AFFAIRS

Olin

MATERIAL SAFETY DATA

1993

ORIGINAL

OCEAN NETWORK EMERGENCY PHONE 1-800-OLIN-911

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD,29 CFR 1910.1200.THIS PRODUCT MAY BE CONSIDERED TO BE A HAZARDOUS CHEMICAL UNDER THAT STANDARD.(REFER TO THE OSHA CLASSIFICATION IN SEC.I.)THIS INFORMATION IS REQUIRED TO BE DISCLOSED FOR SAFETY IN THE WORKPLACE.THE EXPOSURE TO THE COMMUNITY,IF ANY,IS QUITE DIFFERENT.

I. PRODUCT IDENTIFICATION

REVISION NO : 9
REVISION DATE : 12/28/89
PRODUCT CODE : CPE721994
FILE NUMBER : CPE00296.0001
PRODUCT NAME: SODIUM NITRATE
SYNONYMS: Chile Saltpeter, Soda Niter
CHEMICAL FAMILY: Inorganic Salt
FORMULA: $NaNO_3$
USE DESCRIPTION: Chemical intermediate, fertilizer, meat processing
OSHA HAZARD CLASSIFICATION: Oxidizer, skin and eye irritant, lung toxin

II. COMPONENT DATA

PRODUCT COMPOSITION
CAS or CHEMICAL NAME: Sodium nitrate
CAS NUMBER: 7631-99-4
PERCENTAGE RANGE: 99-100%
HAZARDOUS PER 29 CFR 1910.1200: Yes
EXPOSURE STANDARDS: None Established

III. PRECAUTIONS FOR SAFE HANDLING AND STORAGE

DO NOT TAKE INTERNALLY. AVOID CONTACT WITH SKIN, EYES AND CLOTHING. UPON CONTACT WITH SKIN OR EYES, WASH OFF WITH WATER.
STORAGE CONDITIONS:
DO NOT STORE AT TEMPERATURES ABOVE: 52 Deg.C (125 Deg.F)
PRODUCT STABILITY AND COMPATIBILITY
SHELF LIFE LIMITATIONS: 2 years
INCOMPATIBLE MATERIALS FOR PACKAGING: Paper, wood
INCOMPATIBLE MATERIALS FOR STORAGE OR TRANSPORT: Oxidizable organics, flammable organics

IV. PHYSICAL DATA

APPEARANCE: White to slightly yellow solid
MELTING POINT: 308 Deg.C (586 Deg.F)
BOILING POINT: No Data
DECOMPOSITION TEMPERATURE: 540 Deg.C (1004 Deg.F)
SPECIFIC GRAVITY: 2.26
BULK DENSITY: 80 lbs./cu. ft.
pH @ 25 DEG.C: Not Applicable
VAPOR PRESSURE @ 25 DEG.C: Not Applicable
SOLUBILITY IN WATER: 48%
VOLATILES, PERCENT BY VOLUME: Not Applicable
EVAPORATION RATE: Not Applicable
VAPOR DENSITY: Not Applicable
MOLECULAR WEIGHT: 85.01
ODOR: None
COEFFICIENT OF OIL/WATER DISTRIBUTION: No Data

V. PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

PERSONAL PROTECTION FOR ROUTINE USE OF PRODUCT:
RESPIRATORY PROTECTION: Respiratory protection not normally needed. If significant dusting occurs, wear a NIOSH/MSHA approved dust respirator.

VENTILATION: Local exhaust ventilation is recommended if significant dusting occurs. Otherwise, use general exhaust ventilation.

SKIN PROTECTIVE EQUIPMENT: Use safety glasses.

EQUIPMENT SPECIFICATIONS (WHEN APPLICABLE):
RESPIRATOR TYPE: HEPA
PROTECTIVE CLOTHING TYPE (This includes: gloves, boots, apron, protective suit): Impervious

VI. FIRE AND EXPLOSION HAZARD INFORMATION

FLAMMABILITY DATA:
FLAMMABLE: No
COMBUSTIBLE: No
PYROPHORIC: No
FLASH POINT: Not Applicable
AUTOIGNITION TEMPERATURE: No Data
FLAMMABLE LIMITS AT NORMAL ATMOSPHERIC TEMPERATURE AND PRESSURE (PERCENT VOLUME IN AIR): LEL - No Data UEL - No Data

NFPA RATINGS:
Health: 1
Flammability: 0
Reactivity: 0
SPECIAL HAZARD WARNING: OXIDIZER

HMIS RATINGS:
Health: 1
Flammability: 0
Reactivity: 0

EXTINGUISHING MEDIA: Use flooding amount of water only

FIRE FIGHTING TECHNIQUES AND COMMENTS: Use water to cool containers exposed to fire. See Section XI for protective equipment for fire fighting.

VII. REACTIVITY INFORMATION

CONDITIONS UNDER WHICH THIS PRODUCT MAY BE UNSTABLE:
TEMPERATURES ABOVE: 540 Deg.C (1008 Deg.F)
MECHANICAL SHOCK OR IMPACT: No data
ELECTRICAL (STATIC) DISCHARGE: Yes, especially in presence of flammables
OTHER: May explode if heated above 1000 Deg.C (1832 Deg.F)
HAZARDOUS POLYMERIZATION: Will not occur
INCOMPATIBLE MATERIALS: Wood, paper, other flammable materials, oxidizable organics
HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of nitrogen
OTHER CONDITIONS TO AVOID: Do not store on wooden floors or wooden pallets. Keep flames and sparks away.

SUMMARY OF REACTIVITY:
OXIDIZER: Yes
PYROPHORIC: No
ORGANIC PEROXIDE: No
WATER REACTIVE: No

VIII. FIRST AID

EYES: Immediately flush with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Call a physician at once.

SKIN: Immediately flush with water for 15 minutes. Wash the contaminated skin with soap and water. If irritation develops, call a physician. If clothing comes in contact with the product, the clothing should be laundered before re-use.

INGESTION: Immediately drink large quantities of water. Induce vomiting. Call a physician at once. DO NOT give anything by mouth if the person is unconscious or if having convulsions.

INHALATION: If person experiences nausea, headache or dizziness, person should stop work immediately and move to fresh air until these symptoms disappear. If breathing is difficult, administer oxygen, keep the person warm and at rest. Call a physician. In the event that an individual inhales enough vapor to lose consciousness, person should be moved to fresh air at once and a physician should be called immediately. If breathing has stopped, artificial respiration should be given immediately. In all cases, ensure adequate ventilation and provide respiratory protection before the person returns to work.

IX. TOXICOLOGY AND HEALTH INFORMATION

ROUTES OF ABSORPTION
Inhalation, ingestion, skin and eye contact

WARNING STATEMENTS AND WARNING PROPERTIES
HARMFUL IF INHALED OR INGESTED AND UPON SKIN OR EYE CONTACT.

HUMAN DOSE RESPONSE DATA:
ODOR THRESHOLD: Product is odorless.
IRRITATION THRESHOLD: Not Established
IMMEDIATELY DANGEROUS TO LIFE OR HEALTH: The IDLH concentration has not been established.

SIGNS, SYMPTOMS, AND EFFECTS OF EXPOSURE:

INHALATION
ACUTE:
Mild irritation may occur to the throat, upper respiratory tract, and lungs. Any irritation would be transient with no permanent damage expected.
CHRONIC:
No effects known or reported.

SKIN
ACUTE:
May cause transient redness.
CHRONIC:
No effects known or reported.

EYE

Mild irritation to the conjunctiva. There is no effect to the cornea. Any irritation would be transient.

INGESTION

ACUTE:

Gastroenteritis with nausea, vomiting, lethargy, and diarrhea.

CHRONIC:

No effects known or reported.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None known or reported.

INTERACTIONS WITH OTHER CHEMICALS WHICH ENHANCE TOXICITY

There are no chemicals known which enhance the toxicity of the product.

ANIMAL TOXICOLOGY

ACUTE TOXICITY:

INHALATION LC 50: No available data
DERMAL LD 50: No available data
ORAL LD 50: 3.2 g/kg (rat)
IRRITATION: Mild irritant to skin and eyes.

ACUTE TARGET ORGAN TOXICITY:

Lungs

CHRONIC TARGET ORGAN TOXICITY:

There are no known or reported effects from repeated exposure.

REPRODUCTIVE AND DEVELOPMENTAL TOXICITY:

There are no known or reported effects to reproductive function or fetal development.

CARCINOGENICITY:

This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP, or EPA.

MUTAGENICITY:
Sodium nitrate has been shown to produce chromosomal damage in animal experiments but at levels judged to induce a cytotoxic effect to the treated tissue. It does not cause point mutations. It is judged that the risk of genetic damage is not significant in the context of industrial use of sodium nitrate.

AQUATIC TOXICITY:
LC50 - 6,650 mg/l (mosquito fish, 96 hrs.);
10,000 mg/l (bluegill sunfish, 96 hrs.)

X. TRANSPORTATION INFORMATION

THIS MATERIAL IS REGULATED AS A DOT HAZARDOUS MATERIAL.

DOT DESCRIPTION FROM THE HAZARDOUS MATERIALS TABLE 49 CFR 172.101: SODIUM NITRATE, OXIDIZER, UN 1498

REPORTABLE QUANTITY: Not Applicable (Per 49 CFR 172.101, Appendix)

The material described above is subject to the U.S. DOT HAZARDOUS MATERIALS REGULATIONS via the modes and packaging quantities indicated below with the letter "x":

MODE	PACKAGING QUANTITIES	
_x_ Rail	_x_ Bulk	_x_ Non-Bulk
_x_ Motor	_x_ Bulk	_x_ Non-Bulk
_x_ Water	_x_ Bulk	_x_ Non-Bulk
_x_ Air	_x_ Bulk	_x_ Non-Bulk

The applicable packaging sections in 49 CFR are 173.153 and 173.182.

XI. SPILL AND LEAKAGE PROCEDURES

FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC AT 800-424-9300.

REPORTABLE QUANTITY: Not Applicable

SPILL MITIGATION PROCEDURES:
Evacuate all non-essential personnel. Hazardous concentrations in air may be found in local spill area and immediately downwind. Utilize emergency response personal protective equipment prior to the start of any response. Remove all sources of ignition.

AIR RELEASE: Vapors may be suppressed by the use of water fog. Contain all liquid for treatment or neutralization

WATER RELEASE: This material is heavier than and soluble in water. Notify all downstream water users of possible contamination. Divert water flow around spill if possible and safe to do so. Remove with a vacuum system or pumping device for treatment and/or disposal. Continue to handle as described in land spill. Water solutions may percolate into soil and cause spread of contamination beyond point of spill.

LAND SPILL: Create a dike or trench to contain materials. Do not place spill materials back in their original container. Containerize and label all spill materials properly. Decontaminate all clothing and the spill area using a detergent and flush with large amounts of water.

SPILL RESIDUES:
Dispose of per guidelines under Section XII, WASTE DISPOSAL.

PERSONAL PROTECTION FOR EMERGENCY SPILL AND FIRE-FIGHTING SITUATIONS:
In case of fire, use normal fire fighting equipment.

Additional respiratory protection is necessary when a spill or fire involving this product occurs. You are recommended to use a cartridge type NIOSH approved respirator with dust/mist cartridges or a self-contained breathing apparatus (SCBA) positive pressure unit.

Additional protective clothing must be worn to prevent personal contact with this material. Those items include but are not limited to boots, gloves, hard hat, splash-proof goggles and impervious clothing, i.e., chemically impermeable suit.

Compatible materials for response to this material are neoprene, chlorinated polyethylene, polyvinyl chloride, butyl rubber, viton, polyvinyl alcohol and saranex.

XII. WASTE DISPOSAL

If this product becomes a waste, it meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA hazardous waste number: D001

As a hazardous solid waste, it must be disposed of in accordance with local, state, and federal regulations in a permitted hazardous waste treatment, storage and disposal facility by treatment.

CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THIS MATERIAL. THE USER OF THIS MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES.

XIII. ADDITIONAL REGULATORY STATUS INFORMATION

TOXIC SUBSTANCES CONTROL ACT:
This substance is listed on the Toxic Substances Control Act inventory.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT TITLE III:
HAZARD CATEGORIES, PER 40 CFR 370.2:
HEALTH:
Immediate (Acute)
PHYSICAL:
Fire

EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW, PER 40 CFR 355, APP.A:
EXTREMELY HAZARDOUS SUBSTANCE - THRESHOLD PLANNING QUANTITY:
None Established
SUPPLIER NOTIFICATION REQUIREMENTS, PER 40 CFR 372.45:
None Established

XIV. ADDITIONAL INFORMATION

No Additional Information

XV. MAJOR REFERENCES

1. ACGIH Guide to Protective Clothing. Cincinnati, OH: American Conference of Government Industrial Hygienists, 1987.
2. ANSI Z88.2. Recommended Practice for Respiratory Protection. American National Standards Institute, New York, NY.
3. Baker, C. J., The Fire Fighter's Handbook of Hazardous Materials, 4th Ed., Indiana: Maltese Enterprises, Inc., 1984.
4. Bretherick, L., Handbook of Reactive Chemical Hazards, 3rd Ed., Boston, MA: Butterworths, 1985.
5. Casarett, L. and J. Doull, Eds., Toxicology: The Basic Science of Poisons, 3rd Ed., New York: Macmillan Publishing Co., Inc. 1986.
6. CERIS (Chemical Emergency Response Information System) On Line Database. Association of American Railroads.
7. Chemical Degradation and Permeation Database and Selection Guide for Resistant Protective Materials. Austin, TX.

8. Clayton, G. and F. Clayton, Eds., Patty's Industrial Hygiene and Toxicology, Vol. 2A-C 3rd Ed., New York: John Wiley & Sons, 1981-1982.
9. Code of Federal Regulations, Titles 21, 29, 40 and 49. Washington, DC: U.S. Government Printing Office.
10. Fire Protection Guide on Hazardous Materials, 9th Ed., National Fire Protection Association, Batterymarch Park, Quincy, MA, 1986.
11. Gosselin, R., et al., Gosselin-Clinical Toxicology of Commercial Products, 5th Ed., Baltimore: Williams and Wilkins, 1984.
12. Grant, W. Morton, M.D., Toxicology of the Eye, 2nd Ed., Springfield, IL: Charles C. Thomas, 1974.
13. Hazardline, Occupational Health Services Inc., New York, NY.
14. IARC Monogram on the Evaluation of Carcinogenic Risk of Chemicals to Man., Geneva: World Health Organization, International Agency for Research on Cancer.
15. Lenga, R., The Sigma-Aldrich Library of Chemical Safety Data, 1st Ed., Milwaukee, WI: Sigma-Aldrich Corporation, 1985.
16. Lewis, R. and D. Sweet, Eds., Registry of Toxic Effects of Chemical Substances, 1985-1986, Washington, DC: U.S. Government Printing Office, 1987.
17. Medline, U.S. National Library of Medicine, Bethesda, MD.
18. McKee, Jack E. and Harold W. Wolf, Eds., Water Quality Criteria, NTIS PB Report; (PB-82-188244), 2nd Ed., Springfield, VA: National Technical Information Services, 1963.
19. NIOSH Pocket Guide to Chemical Hazards. Washington, DC: U.S. Government Printing Office, 1985.
20. Olin Respiratory Protection Manual.
21. Sax, N. Irving, Dangerous Properties of Hazardous Materials 6th Ed., New York: Van Nostrand Reinhold Company, 1984.
22. Threshold Limit Values and Biological Exposure Indices for 1989-90. Cincinnati, OH: American Conference of Government Industrial Hygienists, 1989.
23. Toxic Substances Control Act Inventory, Washington, DC: U.S. Government Printing Office, 1986.
24. Ishidate, M. et al. 1984. Primary Mutagenicity Screening of Food Additives Currently Used in Japan. Fd. Chem. Tox., Vol. 22, No. 8, pp. 623-636.
25. Ishidate, M. and K. Yoshikawa. 1980. Chromosome Aberration with Chinese Hamster Cells in vitro and without Metabolic Activation - A Comparative Study on Mutagens and Carcinogens. Arch. Toxicol., Suppl. 4, pp. 4-144.

26. Luca, D. et al. 1985. Chromosomal aberrations and micronuclei induced in rat and mouse bone marrow cells by sodium nitrate. Mutation Research 155, pp. 121-125
27. Maekawa, A. et al. 1982. Carcinogenicity Studies of Sodium Nitrite and Sodium Nitrate in F-344 Rats. Fd. Chem. Tox., Vol. 20, pp. 25-33.

THE INFORMATION IN THIS MATERIAL SAFETY SHEET DATA SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. OLIN BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION, BUT MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF THIS MATERIAL SAFETY DATA SHEET IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT OLIN AT THE PHONE NUMBER LISTED BELOW TO MAKE CERTAIN THAT THIS SHEET IS CURRENT.

OLIN MSDS CONTROL GROUP
Olin Corporation
120 Long Ridge Road
Stamford, CT 06904

Phone Number: (203) 356-3449

OLIN CORPORATION SUBSIDIARIES AND AFFILIATED ENTITIES: ASAHI-OLIN LTD., BRIDGEPORT BRASS CORPORATION, INDY ELECTRONICS, INC., OLIN CHLORATE CORPORATION, OLIN FABRICATED METAL PRODUCTS INC., OLIN HUNT SPECIALTY PRODUCTS INC., OLIN ELECTRONICS TECHNOLOGY, OLIN MESA CORP., OLIN SPECIALTY METALS CORPORATION, PACIFIC ELECTRO DYNAMICS, INC., PHYSICS INTERNATIONAL COMPANY, ROCKET RESEARCH COMPANY, OCG MICROELECTRONIC MATERIALS, INC.

DPM 958

SAFETY HEALTH AND ENVIRONMENTAL AFFAIRS

7/94 No longer sell Sodium Nitrate per telephone call by L. A. Pritchett

Olin

MATERIAL SAFETY DATA 1993

ORIGINAL

OCEAN NETWORK EMERGENCY PHONE 1-800-OLIN-911

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200. THIS PRODUCT MAY BE CONSIDERED TO BE A HAZARDOUS CHEMICAL UNDER THAT STANDARD. (REFER TO THE OSHA CLASSIFICATION IN SEC. I.) THIS INFORMATION IS REQUIRED TO BE DISCLOSED FOR SAFETY IN THE WORKPLACE. THE EXPOSURE TO THE COMMUNITY, IF ANY, IS QUITE DIFFERENT.

I. PRODUCT IDENTIFICATION

REVISION NO : 9
REVISION DATE : 12/28/89
PRODUCT CODE : CPE721994
FILE NUMBER : CPE00296.0001
PRODUCT NAME: SODIUM NITRATE
SYNONYMS: Chile Saltpeter, Soda Niter
CHEMICAL FAMILY: Inorganic Salt
FORMULA: $NaNO_3$
USE DESCRIPTION: Chemical intermediate, fertilizer, meat processing
OSHA HAZARD CLASSIFICATION: Oxidizer, skin and eye irritant, lung toxin

II. COMPONENT DATA

PRODUCT COMPOSITION
CAS or CHEMICAL NAME: Sodium nitrate
CAS NUMBER: 7631-99-4
PERCENTAGE RANGE: 99-100%
HAZARDOUS PER 29 CFR 1910.1200: Yes
EXPOSURE STANDARDS: None Established

III. PRECAUTIONS FOR SAFE HANDLING AND STORAGE

DO NOT TAKE INTERNALLY. AVOID CONTACT WITH SKIN, EYES AND CLOTHING. UPON CONTACT WITH SKIN OR EYES, WASH OFF WITH WATER.
STORAGE CONDITIONS:
DO NOT STORE AT TEMPERATURES ABOVE: 52 Deg.C (125 Deg.F)
PRODUCT STABILITY AND COMPATIBILITY
SHELF LIFE LIMITATIONS: 2 years
INCOMPATIBLE MATERIALS FOR PACKAGING: Paper, wood
INCOMPATIBLE MATERIALS FOR STORAGE OR TRANSPORT: Oxidizable organics, flammable organics

IV. PHYSICAL DATA

APPEARANCE: White to slightly yellow solid
MELTING POINT: 308 Deg.C (586 Deg.F)
BOILING POINT: No Data
DECOMPOSITION TEMPERATURE: 540 Deg.C (1004 Deg.F)
SPECIFIC GRAVITY: 2.26
BULK DENSITY: 80 lbs./cu. ft.
pH @ 25 DEG.C: Not Applicable
VAPOR PRESSURE @ 25 DEG.C: Not Applicable
SOLUBILITY IN WATER: 48%
VOLATILES, PERCENT BY VOLUME: Not Applicable
EVAPORATION RATE: Not Applicable
VAPOR DENSITY: Not Applicable
MOLECULAR WEIGHT: 85.01
ODOR: None
COEFFICIENT OF OIL/WATER DISTRIBUTION: No Data

V. PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

PERSONAL PROTECTION FOR ROUTINE USE OF PRODUCT:
RESPIRATORY PROTECTION: Respiratory protection not normally needed. If significant dusting occurs, wear a NIOSH/MSHA approved dust respirator.

VENTILATION: Local exhaust ventilation is recommended if significant dusting occurs. Otherwise, use general exhaust ventilation.

SKIN PROTECTIVE EQUIPMENT: Use safety glasses.

EQUIPMENT SPECIFICATIONS (WHEN APPLICABLE):
RESPIRATOR TYPE: HEPA
PROTECTIVE CLOTHING TYPE (This includes: gloves, boots, apron, protective suit): Impervious

VI. FIRE AND EXPLOSION HAZARD INFORMATION

FLAMMABILITY DATA:
FLAMMABLE: No
COMBUSTIBLE: No
PYROPHORIC: No
FLASH POINT: Not Applicable
AUTOIGNITION TEMPERATURE: No Data
FLAMMABLE LIMITS AT NORMAL ATMOSPHERIC TEMPERATURE AND PRESSURE (PERCENT VOLUME IN AIR): LEL - No Data UEL - No Data

NFPA RATINGS:
Health: 1
Flammability: 0
Reactivity: 0
SPECIAL HAZARD WARNING: OXIDIZER

HMIS RATINGS:
Health: 1
Flammability: 0
Reactivity: 0

EXTINGUISHING MEDIA: Use flooding amount of water only

FIRE FIGHTING TECHNIQUES AND COMMENTS: Use water to cool containers exposed to fire. See Section XI for protective equipment for fire fighting.

VII. REACTIVITY INFORMATION

CONDITIONS UNDER WHICH THIS PRODUCT MAY BE UNSTABLE:
TEMPERATURES ABOVE: 540 Deg.C (1008 Deg.F)
MECHANICAL SHOCK OR IMPACT: No data
ELECTRICAL (STATIC) DISCHARGE: Yes, especially in presence of flammables
OTHER: May explode if heated above 1000 Deg.C (1832 Deg.F)
HAZARDOUS POLYMERIZATION: Will not occur
INCOMPATIBLE MATERIALS: Wood, paper, other flammable materials, oxidizable organics
HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of nitrogen
OTHER CONDITIONS TO AVOID: Do not store on wooden floors or wooden pallets. Keep flames and sparks away.

SUMMARY OF REACTIVITY:
OXIDIZER: Yes
PYROPHORIC: No
ORGANIC PEROXIDE: No
WATER REACTIVE: No

VIII. FIRST AID

EYES: Immediately flush with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Call a physician at once.

SKIN: Immediately flush with water for 15 minutes. Wash the contaminated skin with soap and water. If irritation develops, call a physician. If clothing comes in contact with the product, the clothing should be laundered before re-use.

INGESTION: Immediately drink large quantities of water. Induce vomiting. Call a physician at once. DO NOT give anything by mouth if the person is unconscious or if having convulsions.

INHALATION: If person experiences nausea, headache or dizziness, person should stop work immediately and move to fresh air until these symptoms disappear. If breathing is difficult, administer oxygen, keep the person warm and at rest. Call a physician. In the event that an individual inhales enough vapor to lose consciousness, person should be moved to fresh air at once and a physician should be called immediately. If breathing has stopped, artificial respiration should be given immediately. In all cases, ensure adequate ventilation and provide respiratory protection before the person returns to work.

IX. TOXICOLOGY AND HEALTH INFORMATION

ROUTES OF ABSORPTION
Inhalation, ingestion, skin and eye contact

WARNING STATEMENTS AND WARNING PROPERTIES
HARMFUL IF INHALED OR INGESTED AND UPON SKIN OR EYE CONTACT.

HUMAN DOSE RESPONSE DATA:
ODOR THRESHOLD: Product is odorless.
IRRITATION THRESHOLD: Not Established
IMMEDIATELY DANGEROUS TO LIFE OR HEALTH: The IDLH concentration has not been established.

SIGNS, SYMPTOMS, AND EFFECTS OF EXPOSURE:

INHALATION
ACUTE:
Mild irritation may occur to the throat, upper respiratory tract, and lungs. Any irritation would be transient with no permanent damage expected.
CHRONIC:
No effects known or reported.

SKIN
ACUTE:
May cause transient redness.
CHRONIC:
No effects known or reported.

EYE

Mild irritation to the conjunctiva. There is no effect to the cornea. Any irritation would be transient.

INGESTION

ACUTE:

Gastroenteritis with nausea, vomiting, lethargy, and diarrhea.

CHRONIC:

No effects known or reported.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None known or reported.

INTERACTIONS WITH OTHER CHEMICALS WHICH ENHANCE TOXICITY

There are no chemicals known which enhance the toxicity of the product.

ANIMAL TOXICOLOGY

ACUTE TOXICITY:

INHALATION LC 50: No available data
DERMAL LD 50: No available data
ORAL LD 50: 3.2 g/kg (rat)
IRRITATION: Mild irritant to skin and eyes.

ACUTE TARGET ORGAN TOXICITY:

Lungs

CHRONIC TARGET ORGAN TOXICITY:

There are no known or reported effects from repeated exposure.

REPRODUCTIVE AND DEVELOPMENTAL TOXICITY:

There are no known or reported effects to reproductive function or fetal development.

CARCINOGENICITY:

This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP, or EPA.

MUTAGENICITY:
Sodium nitrate has been shown to produce chromosomal damage in animal experiments but at levels judged to induce a cytotoxic effect to the treated tissue. It does not cause point mutations. It is judged that the risk of genetic damage is not significant in the context of industrial use of sodium nitrate.

AQUATIC TOXICITY:
LC50 - 6,650 mg/l (mosquito fish, 96 hrs.);
10,000 mg/l (bluegill sunfish, 96 hrs.)

X. TRANSPORTATION INFORMATION

THIS MATERIAL IS REGULATED AS A DOT HAZARDOUS MATERIAL.

DOT DESCRIPTION FROM THE HAZARDOUS MATERIALS TABLE 49 CFR 172.101: SODIUM NITRATE, OXIDIZER, UN 1498

REPORTABLE QUANTITY: Not Applicable (Per 49 CFR 172.101, Appendix)

The material described above is subject to the U.S. DOT HAZARDOUS MATERIALS REGULATIONS via the modes and packaging quantities indicated below with the letter "x":

MODE	PACKAGING QUANTITIES	
_x_ Rail	_x_ Bulk	_x_ Non-Bulk
_x_ Motor	_x_ Bulk	_x_ Non-Bulk
_x_ Water	_x_ Bulk	_x_ Non-Bulk
_x_ Air	_x_ Bulk	_x_ Non-Bulk

The applicable packaging sections in 49 CFR are 173.153 and 173.182.

XI. SPILL AND LEAKAGE PROCEDURES

FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC AT 800-424-9300.

REPORTABLE QUANTITY: Not Applicable

SPILL MITIGATION PROCEDURES:
Evacuate all non-essential personnel. Hazardous concentrations in air may be found in local spill area and immediately downwind. Utilize emergency response personal protective equipment prior to the start of any response. Remove all sources of ignition.

AIR RELEASE: Vapors may be suppressed by the use of water fog. Contain all liquid for treatment or neutralization

WATER RELEASE: This material is heavier than and soluble in water. Notify all downstream water users of possible contamination. Divert water flow around spill if possible and safe to do so. Remove with a vacuum system or pumping device for treatment and/or disposal. Continue to handle as described in land spill. Water solutions may percolate into soil and cause spread of contamination beyond point of spill.

LAND SPILL: Create a dike or trench to contain materials. Do not place spill materials back in their original container. Containerize and label all spill materials properly. Decontaminate all clothing and the spill area using a detergent and flush with large amounts of water.

SPILL RESIDUES:
Dispose of per guidelines under Section XII, WASTE DISPOSAL.

PERSONAL PROTECTION FOR EMERGENCY SPILL AND FIRE-FIGHTING SITUATIONS:
In case of fire, use normal fire fighting equipment.

Additional respiratory protection is necessary when a spill or fire involving this product occurs. You are recommended to use a cartridge type NIOSH approved respirator with dust/mist cartridges or a self-contained breathing apparatus (SCBA) positive pressure unit.

Additional protective clothing must be worn to prevent personal contact with this material. Those items include but are not limited to boots, gloves, hard hat, splash-proof goggles and impervious clothing, i.e., chemically impermeable suit.

Compatible materials for response to this material are neoprene, chlorinated polyethylene, polyvinyl chloride, butyl rubber, viton, polyvinyl alcohol and saranex.

XII. WASTE DISPOSAL

If this product becomes a waste, it meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA hazardous waste number: D001

As a hazardous solid waste, it must be disposed of in accordance with local, state, and federal regulations in a permitted hazardous waste treatment, storage and disposal facility by treatment.

CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THIS MATERIAL. THE USER OF THIS MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES.

XIII. ADDITIONAL REGULATORY STATUS INFORMATION

TOXIC SUBSTANCES CONTROL ACT:
This substance is listed on the Toxic Substances Control Act inventory.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT TITLE III:
HAZARD CATEGORIES, PER 40 CFR 370.2:
HEALTH:
Immediate (Acute)
PHYSICAL:
Fire

EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW, PER 40 CFR 355, APP.A:
EXTREMELY HAZARDOUS SUBSTANCE - THRESHOLD PLANNING QUANTITY:
None Established
SUPPLIER NOTIFICATION REQUIREMENTS, PER 40 CFR 372.45:
None Established

XIV. ADDITIONAL INFORMATION

No Additional Information

XV. MAJOR REFERENCES

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22. Threshold Limit Values and Biological Exposure Indices for 1989-90. Cincinnati, OH: American Conference of Government Industrial Hygienists, 1989.
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THE INFORMATION IN THIS MATERIAL SAFETY SHEET DATA SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. OLIN BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION, BUT MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF THIS MATERIAL SAFETY DATA SHEET IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT OLIN AT THE PHONE NUMBER LISTED BELOW TO MAKE CERTAIN THAT THIS SHEET IS CURRENT.

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